

Title (en)
METHOD FOR GROWING MONOCRYSTALLINE DIAMONDS

Title (de)
VERFAHREN ZUR ZÜCHTUNG VON EINZELKRISTALLDIAMANTEN

Title (fr)
PROCÉDÉ PERMETTANT D'OBTENIR DES DIAMANTS MONOCRISTALLINS

Publication
EP 2262920 B1 20161019 (EN)

Application
EP 09766960 A 20090618

Priority

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- SG 2008046377 A 20080618

Abstract (en)
[origin: WO2009154577A1] A method of forming mono-crystalline diamond by chemical vapour deposition, the method comprising the steps of: (a) providing at least one diamond seed; (b) exposing the seed to conditions for growing diamond by chemical vapour deposition, including supplying reaction gases that include a carbon- containing gas and hydrogen for growing diamond and include a nitrogen-containing gas; and (c) controlling the quantity of nitrogen-containing gas relative to other gases in the reaction gases such that diamond is caused to grow by step-growth with defect free steps without inclusions. The nitrogen is present in the range of 0.0001 to 0.02 vol %. Diborane can also be present in a range of from 0.00002 to 0.002 vol %. The carbon-containing gas can be methane.

IPC 8 full level
C30B 25/18 (2006.01); **C30B 29/04** (2006.01)

CPC (source: EP US)
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